

03/14/00  
JC644 U.S. PTO

**STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.**

ATTORNEYS AT LAW

1100 NEW YORK AVENUE, N.W., SUITE 600  
WASHINGTON, D.C. 20005-3934

(202) 371-2600

FACSIMILE: (202) 371-2640; (202) 371-6566

JC525 U.S. PTO  
09/525615  
03/14/00

ROBERT GREENE STERNE  
EDWARD J. KESSLER  
JORGE A. GOLDSTEIN  
SAMUEL L. FOX  
DAVID K.S. CORNWELL  
ROBERT W. ESMOND  
TRACY-GENE G. DURKIN  
MICHELE A. CIMBALA  
MICHAEL B. RAY  
ROBERT E. SOKOHL  
ERIC K. STEFFE  
MICHAEL O. LEE

STEVEN R. LUDWIG  
JOHN M. COVERT\*  
LINDA E. ALCORN  
RAZ E. FLESHNER  
ROBERT C. MILLONIG  
MICHAEL V. MESSINGER  
JUDITH U. KIM  
TIMOTHY J. SHEA, JR.  
DONALD R. MCPHAIL  
PATRICK E. GARRETT  
STEPHEN G. WHITESIDE  
JEFFREY T. HELVEY\*

HEIDI L. KRAUS  
JEFFREY R. KURIN  
RAYMOND MILLIEN  
PATRICK D. O'BRIEN  
LAWRENCE B. BUGAISKY  
CRYSTAL D. SAYLES\*  
EDWARD W. YEE  
ALBERT L. FERRO\*  
DONALD R. BANOWIT  
PETER A. JACKMAN  
MOLLY A. MCCALL

TERESA U. MEDLER  
JEFFREY S. WEAVER  
KRISTIN K. VIDOVICH  
KENDRICK P. PATTERSON  
DONALD J. FEATHERSTONE  
GRANT E. REED  
VINCENT L. CAPUANO  
JOHN A. HARROUN\*  
MATTHEW M. CATLETT\*  
NATHAN K. KELLEY\*  
ALBERT J. FASULO II \*

KAREN R. MARKOWICZ\*\*  
SUZANNE E. ZISKA\*\*  
BRIAN J. DEL BUONO\*\*  
ANDREA J. KAMAGE\*\*  
NANCY J. LEITH\*\*  
TARJA H. NAUKKARINEN\*\*

\*BAR OTHER THAN D.C.  
\*\*REGISTERED PATENT AGENTS

March 14, 2000

**WRITER'S DIRECT NUMBER:**

(202) 371-2587

**INTERNET ADDRESS:**

PGARRETT@SKGF.COM

Assistant Commissioner for Patents  
Washington, D.C. 20231

**Box Patent Application**

Re: U.S. Non-Provisional Utility Patent Application under 37 C.F.R. § 1.53(b)  
Appl. No. To be assigned; Filed: March 14, 2000  
For: **Method, System, and Apparatus for Balanced Frequency Up-  
Conversion of a Baseband Signal**  
Inventors: David F. Sorrells, Michael J. Bultman, Robert W. Cook,  
Richard C. Looke, Charley D. Moses, Jr., Gregory S. Rawlins,  
and Michael W. Rawlins  
Our Ref: 1744.0450003

Sir:

The following documents are forwarded herewith for appropriate action by the U.S.  
Patent and Trademark Office:

1. PTO Utility Patent Application Transmittal Form (PTO/SB/05);
2. U.S. Utility Patent Application entitled:

**Method, System, and Apparatus for Balanced Frequency Up-Conversion of a  
Baseband Signal**

and naming as inventors:

Please type a sign(+) inside this box

PTO/SB/05 (2/98)

App. for use through 09/30/2000. OMB 0651-0032  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>UTILITY PATENT APPLICATION TRANSMITTAL</b> <i>(Only for new nonprovisional applications under 37 CFR § 1.53(b))</i>	Attorney Docket No. <b>1744.0450003</b>	
	First Inventor or Application Identifier <b>David F. SORRELLS</b>	
	Title	Method, System, and Apparatus for Balanced Frequency Up-Conversion of a Baseband Signal
	Express Mail Label No.	

<b>APPLICATION ELEMENTS</b> <i>See MPEP chapter 600 concerning utility patent application contents.</i>	<b>ADDRESS TO:</b> Assistant Commissioner for Patents Box Patent Application Washington, DC 20231
------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------

1. <input checked="" type="checkbox"/> * Fee Transmittal Form (e.g., PTO/SB/17) <i>(Submit an original, and a duplicate for fee processing)</i>  2. <input checked="" type="checkbox"/> Specification [Total Pages <b>134</b> ] <i>(preferred arrangement set forth below)</i> - Descriptive title of the Invention - Cross References to Related Applications - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure  3. <input checked="" type="checkbox"/> Drawings (35 U.S.C. 113) [Total Sheets <b>134</b> ]  4. <input type="checkbox"/> Oath or Declaration [Total Pages _____ ] a. <input type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional with Box 17 completed) [Note Box 5 below] i. <input type="checkbox"/> <b>DELETION OF INVENTOR(S)</b> Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR §§ 1.63(d)(2) and 1.33(b).  5. <input type="checkbox"/> Incorporation By Reference (useable if Box 4b is checked) The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.	6. <input type="checkbox"/> Microfiche Computer Program (Appendix)  7. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Copy b. <input type="checkbox"/> Paper Copy (identical to computer copy) c. <input type="checkbox"/> Statement verifying identity of above copies
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>ACCOMPANYING APPLICATION PARTS</b>  8. <input type="checkbox"/> Assignment Papers (cover sheet & document(s)) 9. <input type="checkbox"/> 37 CFR 3.73(b) Statement (when there is an assignee) <input type="checkbox"/> Power of Attorney 10. <input type="checkbox"/> English Translation Document (if applicable) 11. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations 12. <input type="checkbox"/> Preliminary Amendment 13. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized) 14. <input type="checkbox"/> *Small Entity Statement(s) (PTO/SB/09-12) <input type="checkbox"/> Statement filed in prior application, Status still proper and desired 15. <input type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed) 16. <input checked="" type="checkbox"/> Other: 37 C.F.R. § 1.136(a)(3) Authorization <input type="checkbox"/> Other: <small>*NOTE FOR ITEMS 1 &amp; 14: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).</small>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

17. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☐ Continuation-in-Part (CIP) of prior application No: \_\_\_\_/\_\_\_\_

Prior application information: Examiner \_\_\_\_\_ Group/Art Unit: \_\_\_\_\_

<b>18. CORRESPONDENCE ADDRESS</b>					
<input type="checkbox"/> Customer Number or Bar Code Label _____ (Insert Customer No. or Attach bar code label here) _____ or <input checked="" type="checkbox"/> Correspondence address below					
NAME	STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.				
	Attorneys at Law				
ADDRESS	Suite 600, 1100 New York Avenue, N.W.				
CITY	Washington	STATE	DC	ZIP CODE	20005-3934
COUNTRY	USA	TELEPHONE	(202) 371-2600	FAX	(202) 371-2540

NAME (Print/Type)	Patrick E. Garrett	Registration No. (Attorney/Agent)	39,987
SIGNATURE	<i>Patrick E. Garrett</i>	Date	3/14/00

Burden Hour Statement: this form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Assistant Commissioner for Patents  
March 14, 2000  
Page 2

**David F. Sorrells, Michael J. Bultman, Robert W. Cook, Richard C. Looke,  
Charley D. Moses, Jr., Gregory S. Rawlins, and Michael W. Rawlins**

the application consisting of:

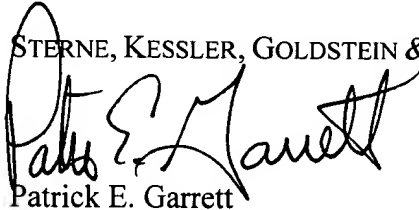
- a. A specification containing:
  - i. 108 pages of description prior to the claims;
  - ii. 25 pages of claims (95 claims);
  - iii. a one (1) page abstract;
- b. One-hundred and thirty-four (134) sheets of drawings: ( Figures 1A-D, 2A, 2B, 3-14, 15A-F, 16-19, 20A, 20A-1, 20B-F, 21, 22A-F, 23A-F, 24A-J, 25A, 25B, 26A-D, 27A-J, 28A, 28B, 29, 30A-C, 31A, 31B, 32, 33, 34A, 34B, 35A, 35B, 36, 37A-F, 38-51, 52A-Z, 53A-C, 54A-C, 55A-D, 56A-D, 57, 58A-C, 59-67, 68A, 68B, 69A, 69B, 70A-R, 71-73, and 74A-E);
3. PTO Fee Transmittal Form PTO/SB/17 (in duplicate);
4. Authorization to Treat a Reply As Incorporating An Extension of Time Under 37 C.F.R. § 1.136(a)(3)(in duplicate);
5. Our check No. 26910 for \$2,664.00 to cover:
  - \$ 690.00 filing fee for patent application;
  - \$1,350.00 fee for claims in excess of twenty;
  - \$ 624.00 fee for excess independent claims; and
6. Two (2) return postcards.

It is respectfully requested that, of the two attached postcards, one be stamped with the filing date of these documents and returned to our courier, and the other, prepaid postcard, be stamped with the filing date and unofficial application number and returned as soon as possible.

Assistant Commissioner for Patents  
March 14, 2000  
Page 3

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036. A duplicate copy of this letter is enclosed.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.  
  
Patrick E. Garrett  
Attorney for Applicants  
Registration No. 39,987

0450003.pto

0450003.pto

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No. To be assigned

Filed: March 14, 2000

For: **Method, System, and Apparatus  
for Balanced Frequency Up-  
Conversion of a Baseband Signal**

Art Unit: To be assigned

Examiner: To be assigned

Atty. Docket: 1744.0450003



**Authorization To Treat A Reply As Incorporating An Extension Of Time  
Under 37 C.F.R. § 1.136(a)(3)**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

The U.S. Patent and Trademark Office is hereby authorized to treat any concurrent or future reply that requires a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. The U.S. Patent and Trademark Office is hereby authorized to charge all required extension of time fees to our Deposit Account No. 19-0036, if such fees are not otherwise provided for in such reply. A duplicate copy of this authorization is enclosed.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Patrick E. Garrett  
Attorney for Applicants  
Registration No. 39,987

Date: 3/14/00  
1100 New York Avenue, N.W.  
Suite 600  
Washington, D.C. 20005-3934  
(202) 371-2600